

the pink tint, and passes first into urrhodin, and subsequently it passes into the blue uroglaucin. I believe these changes may sometimes be followed in cholera stools, with which not a particle of urine has been mixed. So, also, I believe, that this modified bile has been included by Dr. Golding Bird in his description of purpurine, although it does not altogether correspond to this substance. But it would be foreign to the object of this note to pursue the subject further at this time."—*Monthly Journ. of Med. Sciences*, Oct. 1849.

59. *Abstract of Observations made in the Cholera Hospital at Leyden, during November and December, 1848, and January, 1849.* By Dr. F. J. J. SCHMIDT.—From the 7th of November, 1848, to the 3d of January, 1849, 146 patients were received into the hospital—82 males, and 64 females. Forty-nine of the patients were under fifteen years of age. The youngest admitted was two years and a-half old, the oldest seventy-two. With the exception of ten persons, who were suffering merely from ordinary diarrhoea, all were affected with genuine Asiatic cholera. The greatest number were admitted towards the end of November, and the first half of December. All were of the lowest class; workmen, labourers, beggars, &c.; and all, except three, inhabitants of Leyden. It could not be ascertained that any of them had been attacked during the epidemic of 1832.

Many of those who were not carried off by the cholera were attacked with consecutive diseases—by far the most frequent of these being typhus.

Few of the patients could give any clear account of premonitory symptoms; and very many described their health to have been perfectly good just previous to the attack. Excesses of various kinds could not be traced as the exciting cause, nor was it observed that more patients were admitted after Sundays and festivals. Exposure to unusually wet weather seemed to have more influence. An instance of this was furnished by a beggar, who went out on a very rainy morning in good health, wandered about all day, and was brought dripping wet to the hospital, at nine in the evening, in the worst state of collapse; he died early the following morning.

None of the numerous hospital attendants were attacked with the disease.

There was much variety in respect of the duration of the illness. The shortest periods were eight and nine hours; both fatal cases. The occurrence of hiccup during the attack was usually a fatal sign; a fact in direct opposition to the statements of several German writers.

In two women, who were suckling at the time of their being attacked, the mamæ became completely collapsed during the acute stage. With the first signs of reaction they began to swell, soon became turgid with milk, and, when reaction had fully set in, were so distended and painful, that it was necessary to draw off the milk several times. In both patients, this was done twice before the secretion of urine had been re-established, and in one of them before the feces had begun to be coloured with bile. The milk was very thin, of a light green tint, and became of a more decidedly green colour in the course of a few days. Chemical analysis demonstrated the presence of uric acid in it before the secretions of urine had set in. The colouring matter of bile could not be detected by the ordinary tests, so that the cause of the greenness was not ascertained. In the last-named patient, the milk first secreted was found to be composed as follows:—

1000 parts contained—

Water, - - - - -	917.007
Solid matter, - - - - -	82.993
Casein, - - - - -	8.714
Butter, - - - - -	2.919
Sugar of milk, } - - - - -	71.223
Extractive matter, }	
Salts, - - - - -	0.127
Urea, - - - - -	82.993

The milk, when fresh, was neither acid nor alkaline; its specific gravity was 1028.3, healthy milk having a specific gravity of 1028 to 1042.

The bodies of all the seventy-three patients who died were examined, at from twelve to thirty-six hours after death; none at a later period. In all cases where death had occurred in the acute stage, it was noticed that a remarkable elevation of temperature took place immediately after death. Bodies which, long before that event, and up to the last breath, felt as cold as corpses, and which the thermometer proved to be several degrees below the temperature of the surrounding air, showed, a few minutes after death, a very sensible increase of warmth, whether they were laid in a cold place and covered merely with a sheet, or remained covered up in blankets. In either case, this increased warmth was retained for several hours, and they did not become as cold as ordinary corpses until the expiration of twelve or sixteen hours. It is worthy of notice that the bodies were generally found to a great extent free from the traces of previous acute or chronic diseases. This remark fully applies to the old subjects. In no one instance were decided tubercles found; and only in very few cases trifling earthy deposits in the upper lobes of the lungs, surrounded with condensed tissue. Carcinoma did not once occur in any organ.

*Cranium and Vertebral Canal.*—In the cases of pure cholera (uncomplicated with typhoid symptoms), the universal congestion of the veins and arteries, described by some authors, was by no means constantly observed. This condition was only noticed in the vessels and sinuses at the base of the skull. In only about one-fourth of the cases were the membranes of the brain much injected, and its substance hardly ever; so that a section of it exhibited no more than the ordinary number of bloody points. In about half the cases, the arachnoid was thickened, whitish, and opaque, and easily separable from the convolutions, the result of serous exudation. The quantity of fluid in the ventricles varied greatly, and seemed to bear no proportion to the duration of the disease. The same remark applies to the consistence of the brain itself.

The spinal cord and its membranes were examined in two bodies only; nothing remarkable was found in either case.

*Thorax.*—The larynx, trachea, and bronchi, the pharynx and œsophagus, presented nothing worthy of note. The only morbid condition found in the lungs was "œdema," which existed in the majority of cases of pure cholera where much dyspnoea had preceded death. The rarity of tubercular disease has been already noticed.

The heart and great vessels usually contained a large quantity of blood, the condition of the latter varying considerably. In most cases of pure cholera, no fibrinous coagula were to be found, but the cavities of the heart were distended with thick blood, in which large black clots had formed, extending into the great vessels, and easily giving way when an attempt was made to draw them out. Occasionally, these clots were mixed with small shreds of pure fibrin. The arteries more remote from the heart were entirely empty; the veins contained more or less blood, dark of colour, and of ropy consistence.

*Abdominal and Pelvic Cavities.*—The absence of all unpleasant smell on opening the abdominal cavity, which many have asserted to be characteristic of cholera subjects, was by no means universal. In several cases, the odour was most disagreeable. The abdominal viscera, for the most part, presented the general condition and aspect which have been often described. In adults, the distended pale stomach, the turgid gall-bladder, projecting beyond the margin of the liver, the inflated ascending and descending colon, the contracted transverse portion, and the deeply injected small intestines and omentum, were strikingly evident. The quantity of matter contained in the alimentary canal depended, of course, on the greater or less amount of diarrhoea which had taken place; like the dejections during life, it was colourless, and, where the illness had run but a short course, mixed with undigested food. Tympanitis was rare in the small intestines, but more frequent in the ascending colon. The stomach usually contained, in addition to a larger or smaller quantity of the matters above-mentioned, a considerable bulk of air. In by far the greater number of cases, its mucous membrane might be termed normal, of a light reddish colour, often covered with a tenacious mucus, easily wiped off. The larger scattered glands could be noticed as white, prominent points in only two or three cases. General or partial injection of the mucous membrane was not

observed; but, occasionally, small, circumscribed, round extravasations, resembling petechiæ in appearance.

*Duodenum.*—In this intestine, as in the other small intestines, vascular injection was rarely noticed. Brunner's glands were frequently found enlarged, from the size of a pin's head to that of a lentil. This condition, however, did not exist in patients who had died typhoid.

*Ileum and Jejunum.*—In this portion of the alimentary canal, the greatest variety of appearances was manifested, from extreme anæmia to a high degree of vascular injection; the glands, in some cases, undistinguishable, in others offering the most marked specimens of "infarctus," and these varieties having no apparent relation to the intensity or duration of the disease. In children, the mucous membrane was usually pale and bloodless, but frequently of the normal reddish colour. In other cases, there was considerable injection of the vessels along the free portion of the intestine: the highest degree of injection, in which the mucous membrane assumed a deep red, from the multitude of gorged capillaries, was extremely rare. In two or three instances only did circumscribed extravasations—petechiæ—occur. The above remarks, as to the vascular injection of mucous membrane, apply equally to the typhoid cases; but in the latter the contents of the intestines were, of course, different in their character. In a very few instances, no trace of glands could be seen throughout the whole course of the intestines. The glandulæ solitariae, and Peyer's glands, were sometimes barely discernible, as in ordinary post-mortem examinations; at one time they would be found a little raised above the level of the mucous membrane; at another, the glandulæ solitariae would be as much developed as those in the duodenum, while the number, extent, and "infarctus" of Peyer's glands presented the appearance described by authors as "plaques intestinales." This enlargement was by no means equal in both sets of glands; the largest "plaques" being sometimes seen where there was not a trace of solitary glands, and *vice versa*. In patients who died typhoid, the glands were usually found normal in appearance; ulcerations of Peyer's glands being nowhere met with.

*Large Intestine.*—The partly distended and partly contracted state of the colon has been already noticed. Its contents were in all respects similar to those of the small intestines; the mucous membrane was, in most cases, normal, and the glandulæ solitariae rarely enlarged. Except in a few bodies, where there were traces of old dysentery, morbid appearances were found only where bloody stools had preceded death; in such patients, the mucous membrane was more or less injected, sometimes so deeply as to be here and there black, the contents of the bowel being also mixed with bloody exudation.

The *Liver* was always unchanged in structure and colour (with the exception of a few specimens of fatty degeneration, and of earthy deposits); the vessels filled with dark blood. The biliary ducts were almost always greatly enlarged, filled with thick, green bile, which was infiltrated into the surrounding parenchyma of the liver. The distension of the gall bladder was considerable, but varied in different subjects. The bile itself offered every variety of appearance.

Neither in the *Spleen* nor the *Pancreas* was any change observable.

The only circumstance worthy of notice in the *Kidneys* was the large quantity of mucous fluid which could generally be made to exude from the pyramids by pressure. Sometimes this fluid was to be found also in the calices and pelvis of the kidneys; and when this had been washed away, a few drops might still be squeezed from the uriniferous tubes. Under the microscope, this fluid appeared to consist wholly of pus cells and epithelium, without any trace of crystals. It had no urinous odour.

The *Bladder* always presented the appearance described by those who have written on the subject, being extremely contracted, quite empty, and showing no trace of vascularity, with the exception of a circle of fine vessels around the neck.

Nothing remarkable was detected in the *Genital Organs*, *Nervous*, or *Muscular Structure*. The muscles were usually hard or dark-coloured, having much the appearance of smoked meat.—*Monthly Journal*, Nov. 1849, from *Klinick*, vol. iv. p. 525.